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Animal health services at work

Evidence from Mukono
and Wakiso districts

UGANDA



USAID
FROM THE AMERICAN PEOPLE

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Executive summary

Animal health policies and strategies are, in most countries, comprehensive and well-designed but poorly implemented. One of the reasons is that there is little systematic information on the challenges and constraints policy implementers face, which makes it difficult to design effective policy implementation mechanisms. This report explores the functioning of public animal health services in two local governments of Uganda – Mukono and Wakiso Districts – which are in charge of implementing the animal health policy and legislative framework at local level. It relies upon official data on the availability of financial and human to provide animal health services at local level, and on a representative survey of frontline animal health staff operating in the two counties. Frontline animal health officers are empowered by the government to facilitate the implementation of the prevailing policy and legislative framework as they regularly interact and cooperate with private sector actors along the livestock value chain. Results suggest that animal health services are greatly understaffed and under-resourced, and that the working environment of frontline health officers is not conducive in terms of personal incentives, working procedures, and knowledge of the prevailing policy and legislative framework and of emerging animal health issues. While more resources should be allocated to public animal health services, local administrations could make veterinary services more effective also by establishing partnerships with private actors and improving the working environment of animal health officers.¹

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1. Introduction

Frontline animal health officers, who regularly deal with private sector stakeholders along the livestock and poultry value chains, play a fundamental role in supporting the enforcement of One Health-related policies and laws. They are, for instance, the animal health officers who provide advice to livestock farmers and vaccinate animals against selected diseases; the officers in slaughter slabs who conduct ante-mortem and post-mortem inspections to ensure no any disease spreads from animals to humans; the officers in food markets who check on the safety and quality of food on sale to consumers. In Uganda, frontline animal health officers, such as Veterinary Officers, Animal Production Officers, Animal Husbandry Officers and Laboratory Technologists, operate at district level. They are recruited by the District Service Commission, with specific contractual obligations, and their ultimate mandate is to steer up livestock sector development in the district through supporting the implementation of animal health policies and legislations.

In most districts, however, current animal health policies and legislations remain poorly implemented. One of the reasons is that the policy-making and legislative processes do not take into adequate account the capacity of public animal health officer to deliver and perform at district level. This is the case as animal health policy formulation and implementation fall under the responsibility of two different levels of government, the former being in the hands of the national government and the later in the hands of the local administration. In many cases, therefore, the overarching animal health policy and legislative framework poorly reflects conditions at district level and, hence, is partially implemented. There are laws, for example, that prescribe that poultry farmers should get a movement permit from a public veterinarian before shipping broilers to the market. The public veterinarian, who does not receive any transport allowance, is however supposed to provide services to hundreds of broiler farmers as well as to perform functions in slaughterhouses, milk processing facilities and livestock markets. In this context, it is difficult for a farmer to fully access veterinary services and abide to the law, to the extent that such behaviour would be unpunishable in several judicial systems.

Accurate information on the constraints and challenges local governments face when implementing policies, laws and regulations, that is when they provide their services on the ground, helps design animal health policies and legislations that are consistent with the local contexts, and hence actionable. However, while documentation abounds on the behaviour and constraints of private actors along the livestock value chain, such as farmers and traders, there is little systematic information on the functioning of public animal health services. The relevant exception is the OIE Performance Evaluation of Veterinary Services (PVS). The PVS, however, is a national level document and, as such, it broadly portrays the functioning of veterinary services and does not provide details on issues and challenges at local level, where policies and legislations are implemented.

This report presents an analysis of public animal health services in Wakiso and Mukono Districts, Uganda. It relies upon official government data on the availability of financial and human resources to provide animal health services at district level as well as on a representative survey of frontline animal health staff operating in the two districts. To our knowledge, this is the first time that, in Uganda, frontline animal health officers are systematically interviewed to directly hear from their voice the constraints and challenges they face when performing their functions.

The next section introduces Wakiso and Mukono districts and presents the dataset. Section three presents and discusses the institutional set up of veterinary services in the two districts and their

financial and human resource availability. Section four presents the working environment, the incentives and the knowledge of frontline animal health officers. Section five summarises and concludes with some recommendations for decision-makers.

2. Geographic location and dataset

According to the latest population census (UBOS, 2014), Uganda has a population of approximately 35 million people distributed across the 146 districts of the country. Wakiso district, with a population close to 2 million, is the most populated of Uganda, followed by Kampala with 1.6 million. Mukono, with a population of about 0.6 million, ranks fourth. Both districts are peri-urban, with Wakiso partly encircling Kampala, the capital and largest city of Uganda, and Mukono town being located about 20 km east of Kampala.

Being highly populated, Kampala, Wakiso and Mukono districts are major markets for animal source food in Uganda. Consumption of livestock products is also anticipated to expand rapidly in the coming decades, given current trends in population growth and urbanization. Available projections indicate that Uganda's population is expected to reach 100 million by 2050, with about 47 million people living in cities and towns in 2050 as compared to 10 million today. Between 2015 and 2050, meat and milk consumption will increase by about 1.5 and 3.0 million tonnes, respectively, and in 2050 urban consumers will contribute about 56 and 59 percent to the total meat and milk consumption, respectively, vis-à-vis 31 and 19 percent today (FAO, 2020).

The livestock value chain will grow and transform to satisfy the demand of this increasingly affluent and urbanized population and, particularly in the short and medium-term, an increased number of market-oriented livestock operations are expected to emerge in urban and peri-urban areas, including in Mukono and Wakiso districts (FAO, 2020). Already today, there is evidence that, in developing countries, animal density in and around urban areas is as high as in rural areas (Latino *et al.*, 2020).

The importance of an effective system of animal health services in urban and peri-urban areas characterized by high and growing density of both animals and humans cannot be overemphasized. On the one hand, it helps to control and minimize the impact of animal diseases, thereby supporting farmer livelihoods and ensuring the availability of affordably priced and safe livestock products for consumers. On the other, it minimizes the risk of outbreaks and spread of zoonotic diseases that, if go uncontrolled, might have disruptive impact on society, such as avian influenza.

To appreciate how veterinary services function in Wakiso and Mukono districts, we took a two-pronged approach. First, we gathered and examined government data on the institutional set up, the budget and the number of animal health staff operating in the two districts. This provides insight on the "hardware" available for the provision of animal health services on the ground. Second, in cooperation with the district authorities, we created a list of all public frontline animal health officers providing services in the two districts and interviewed 51 of them, including 25 out of 26 (96.1 percent) in Wakiso and 26 out of 26 (100 percent) in Mukono. The survey included questions on the working conditions of frontline animal health officers, the procedures they follow to provide their services, the system of incentives as well as their knowledge of existing policies, laws and of the One Health approach. Data from the survey allows investigating the "software" for the delivery of animal health services, i.e. the working modalities of frontline animal health officers and the constraints they face when operating on the ground.

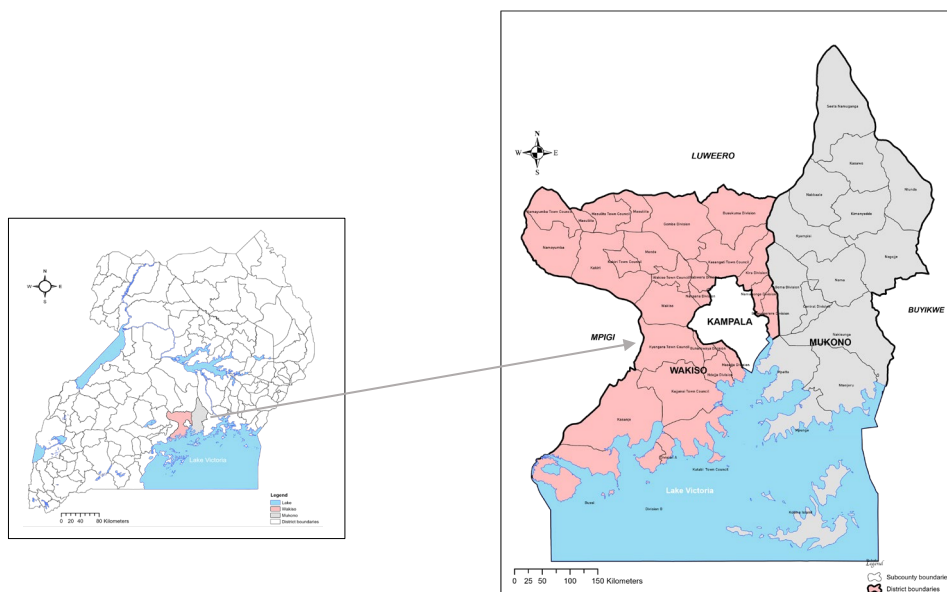


Fig 1. Uganda: Wakiso and Mukono Districts

Source: for country boundaries: United Nations, Map No 4170, October 2020; for regional boundaries, GADM, accessed in March 2021. The boundaries and names shown and the designations used on this/these map(s) do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers and boundaries. Dashed lines on maps represent approximate borderlines for which there may not yet be full agreement.

3. The organization of veterinary Services in Wakiso and Mukono Districts

3.1. Institutional set-up

The 2001 Policy on the Delivery of Veterinary Services recognised and categorised public and private veterinary services. Private services involve provision of clinical services, veterinary drugs and other supplies, tick control, livestock monitoring, artificial insemination, animal disease diagnostics and some aspects of training animal health service providers. Public services include policy formulation, strategic national planning, technical guidance, setting standards and regulations, inspection, co-ordination, and monitoring and evaluation.

At National level, the Department of Animal Health, within the Directorate of Animal Resources in the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), is headed by the Commissioner of Animal Health or Chief Veterinary Officer (CVO). The Department of Animal Health “supports control of animal diseases and vectors for improved food security and household income” (www.agriculture.go.ug). This requires cooperating with local administrations as, according to the Uganda local government structure (MoLG, 2016), “crop, animal and fisheries husbandry extension services”, “entomological services and vermin control”, “food and drug inspection”, “administration of markets” are Districts’ responsibility. In particular, in every District there should be District Production Officer (DPO), who heads a number of production departments (e.g. Veterinary, Fisheries, Entomology and Agriculture). The Veterinary Department is headed by one Principal Veterinary Officer (PVO) who is assisted by one Senior Veterinary Officer (SVO), one Veterinary Officer (VO) and one Animal Husbandry Officer (AHO). Their roles are defined in the Local Government Job Description document (MoPS, 2011). A district is made up of counties (rural) or municipalities (urban) and by sub-Counties (rural) and town councils (urban). Currently, Mukono has one municipality, 11 sub-Counties,

and 5 town councils, while Wakiso has 4 Municipalities, 9 sub-Counties and 10 town Councils. Every sub-County / town Council is expected to have one Veterinary Officer (VO) and one Assistant Animal Husbandry / Production Officer (AAHO/AAPO). These frontline animal health officers perform a multitude of functions, such as disease control and vaccination, provision of breeding services, meat and market inspection, regulation of livestock movement and, sometimes, clinical services.

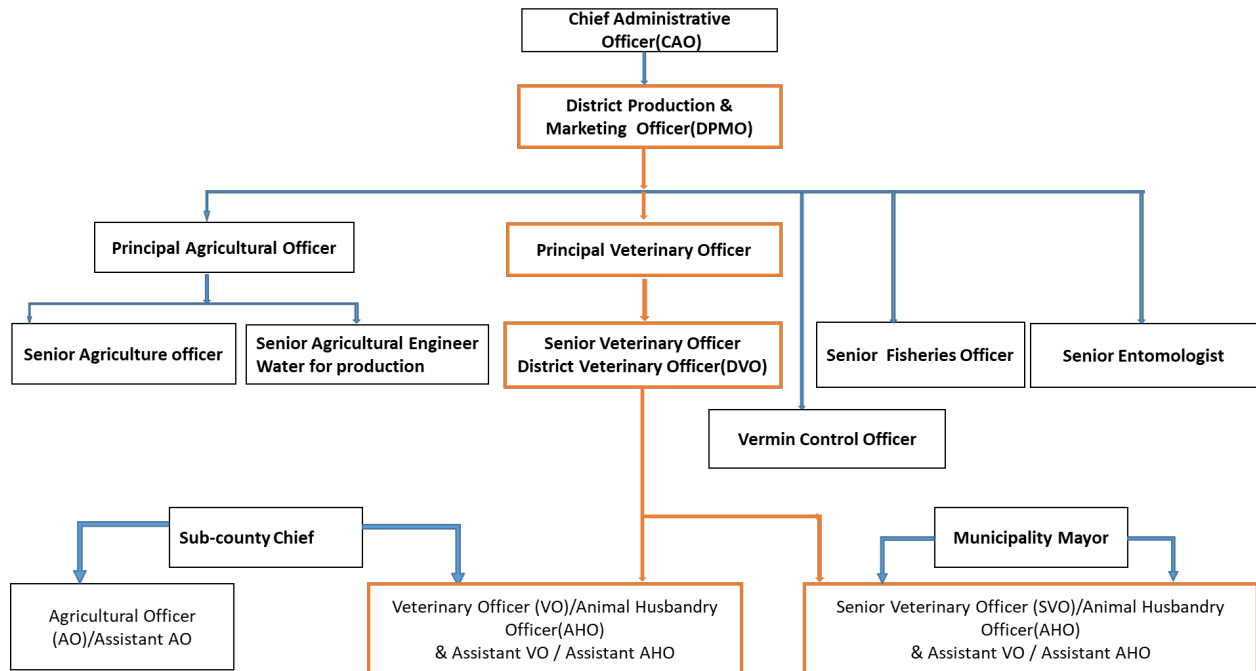


Fig 2. Organogram of veterinary services at district level

3.2. Finance

The national budget process involves a variety of actors including the Ministry of Finance, Planning and Economic Development (MFPED), Sector Working Groups, Line Ministries and Local Governments, Cabinet. The budget is approved by the Parliament.

The Local Governments' Budgets and Plans form an integral part of the national budget. A series of local government consultative workshops are held to launch the preparation of the Local Government Budget Framework Papers (LGBFPs). These workshops, which are facilitated by the Ministry together with representatives from relevant sectors, are attended by political leaders and heads of departments from the local governments. Their purpose is inform local governments of the National Government priorities for the next financial year; the indicative planning figures for Central Government transfers to local governments. During the workshops there also discussion on issues that affect the operations of local governments.

Then each District and Municipal Local Government prepares a Local Government Budget Framework Paper (LGBFP). The LGBFP is guided by the long term Local Government Development Plan as well as any emerging issues and priorities of the communities within the Local Government. The different departments in each Local Government contribute to the LGBPF and also prepare their budget estimates. These consultations are the basis for preparation of LGBFPs, which all Local Governments submit to the Ministry of Finance to inform the National Budget Framework Paper.

In financial year 2019/2020, the budget of Mukono district was about 14.4 million USD, of which 3.82 percent was allocated to agriculture. The budget of Wakiso district was around 16.2 million USD, of

which 1.58 percent was allocated agriculture. The proportion of the districts’ budget allocated to agriculture appears low considering that, in both districts, many communities depend on agriculture for their livelihoods.

In the FY 2019/2020, a total of US\$ 6 100 000 was allocated to the Veterinary Sector in Wakiso and US\$ 4 500 000 to Mukono. This implies that, on average, about 2 000 US\$ (\approx 0.56 USD) and 1 300 US\$ (\approx 0.36 USD) were available for the provision of animal health services to each of the 2 300 and 4 640 households rearing livestock in the Mukono and Wakiso Districts, respectively. Bearing in mind that in Mukono and Wakiso between 81 and 92 percent of the recurrent budget, respectively, is allocated to cover staff salaries, that farmers keep more than one animal, that veterinary departments are in charge to provide animal health services not only to livestock farmers but all along the livestock value chain, such as in slaughterhouses and markets, available resources are likely to be barely adequate for a functional system of veterinary services.

3.3. Human resources

Human resources are a key pillar for an effective system of animal health services. A review of staffing levels of animal health officers in Wakiso and Mukono districts in August 2020 reveals a huge variance between the in-post and the authorised establishment. With an established staffing level of 41 and in-post of 27, Mukono district has a deficit of 14 staff (-35 percent). In Wakiso, the staffing gap is over 50 percent, with 27 animal health officers employed out of 56 authorized. This mirrors the situation at national level where, in 2019, out of 886 of the approved establishment at the headquarters, only 601 positions or 68 percent of the posts were filled.

Table 1. Animal health staff in Mukono and Wakiso districts

District	Staff in post	Staff authorized	Gap	In-post level
Mukono	27	41	14	65.9 %
Wakiso	27	56	29	48.2 %

In both districts officers mainly provide extension services to livestock farmers / farms, including but not limited to vaccination and clinical services, are responsible for data collection and reporting, animal and meat inspection and animal movement control. The number of officers involved in inspection of milk processing and collection centres, carrying out laboratory diagnosis and animal insemination is limited.

Given the number of vacant posts, it is no wonder that frontline staff find themselves providing animal health services in more than one unit of responsibility (slaughterhouses, milk collection & processing facilities, livestock markets). But successfully performing their job would be very challenging even if they had to only provide services to livestock farmers. Mukono and Wakiso have an estimated livestock farmers’ population of 63 079 (43.8 percent) and 125 447 (25.0 percent) households respectively (UBoS, 2017) which, as of today, would mean that every animal health officer, including the Principal Veterinary Officer, is supposed to provide services to an average of about 2 300 and 4 640 livestock-keeping households, respectively.

4. Frontline animal health officers at work

4.1. Working conditions

The working conditions of frontline officers, both in Mukono and Wakiso districts are not always conducive, and not only because of limited human and financial resources. Officers spend over 60

percent of their time is in travelling, administrative duties, formal meetings with colleagues and in managing their own business, which prevents them from perusing their primary work they are appointed to execute. About 40 percent of their time is devoted to provide services to clients.

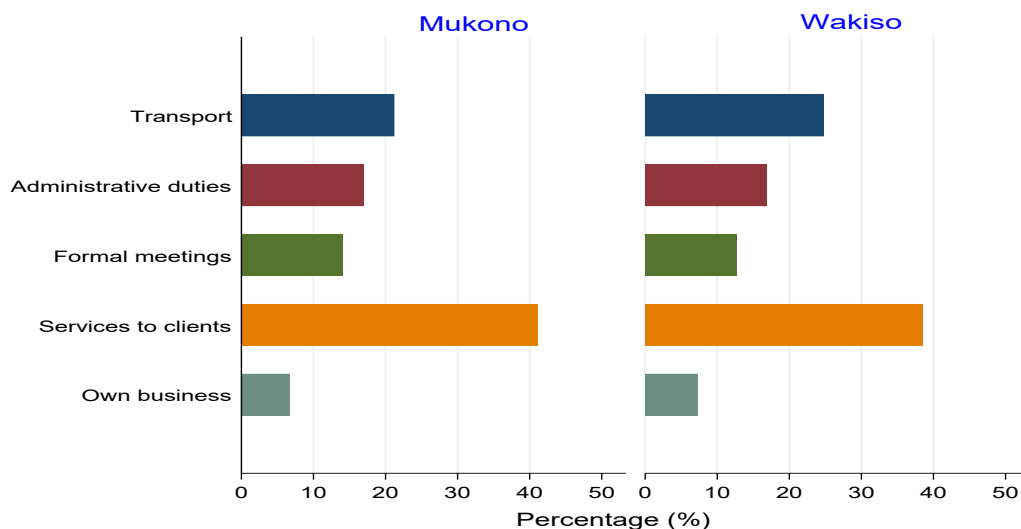


Fig. 4. Allocation of frontline animal health officers’ working time across different activities

The majority of frontline animal health officers (about 80 percent in both Wakiso and Mukono districts) have an office space, though many have no access to a computer (65 percent in Mukono and 36 percent in Wakiso districts). Of those with computer access, only 28 percent of them have got it from the government. Computer access would be necessary, for example, to draft monthly reports as well as input data in the animal disease reporting form. All frontline officers, as expected, own a mobile phone, which they widely use to communicate with stakeholders along the livestock value chains. However, the local government provides only a handful of officers (4 percent) with a mobile phone and only about 32 percent receive regular airtime allowance to utilize their phones.

In both districts, the main means of transport of animal health officers are motorcycle (47 percent), public transport (33 percent) and private cars (24 percent). Most of the motorcycles have been provided by government. However, these are limited in number and in many of sub-counties one motor cycle is shared amongst staff in the production department. In addition, only about 1/3 of frontline officers riding a motorcycle receive fuel coupons.

Local governments are expected to provide Personal Protecting Equipment (PPE) to frontline animal health officers, but only 2 percent of them get it. All others purchase out of their own pocket protecting clothing, gloves, googles and other PPEs or they do not use them at all.

Table 2. Working conditions of animal health frontline officers

	Mukono N=26(51.0%)	Wakiso N=25(49.0%)	Overall (N = 51)
Have an office space	84.6%	76.0%	80.4%
Have a computer	34.6%	64.0%	49.0%
Use a government provided computer	22.2%	31.3%	28.0%
Use mobile phone for work	100.0%	100.0%	100.0%
Provision of mobile phone by government	3.8%	4.0%	3.9%
Provision of regular airtime allowance by government	8.0%	28.0%	18.0%

Main means of transport: Motor cycle	53.8%	40.0%	47%
Public transport	34.6%	32.0%	33.3%
Private cars	11.1%	40.0%	24.2%
Receive regular transport allowance	36.0%	33.3%	34.8%
Government regularly provides PPE	0.0%	4.2%	2.0%
Collect a levy/fee when providing services	88.5%	87.5%	88.0%
Charge fee to recover cost of providing services (non-governmental)	69.6%	38.1%	54.5%
Engagement in other income generating activities	92.3%	88.0%	90.2%
Private animal health provision	54.2%	72.7%	63.0%
Farm/livestock keeper	75.0%	72.0%	73.9%
Small shop	29.2%	31.8%	30.4%

Because of limited government support, over half (54 percent) of the animal health frontline officers charge a fee (almost 70 percent in Mukono and 38 percent in Wakiso), in addition to the government prescribed fee, when providing their services. This allows to cover some of the service costs they incur, such as transport costs. More than 90 percent of frontline officers are also engaged in other income-generating activities as a way to complement their salary, such as rearing livestock (73.9 percent), provision of private animal health services (63 percent) and operating small shops (30.4 percent).

4.2. Incentives

Over 90 percent of frontline animal health officers contend to have a clear job description and 80 percent have discussed their Terms of Reference with both their technical and administrative supervisors upon taking office. They work hard: close to 37 percent of them work beyond five working days, that is between six and seven days per week. Almost 30 percent, on average, work for more than 8 hours per day.

The large majority (67 percent) state to follow clear procedures when on duty, such as reporting to their technical supervisor any suspected notifiable disease; working at least from 8 am to 5 pm; writing weekly reports; registering their name at the farm they visit; wearing personal protecting equipment; etc. Many have never seen/had any change in working procedures since they took office, though they have discussed working procedures / modalities with their supervisors and have participated in consultative processes aimed at their improvement.

Table 3. Working procedures of frontline animal health officers

	Mukono N=26(51.0%)	Wakiso N=25(49.0%)	Overall (N = 51)
Have daily / weekly communication with technical supervisor	69.3%	68%	67.6%
Organize their work plan alone	76.9%	76.0%	76.5%
Have clear procedures to follow when on duty	53.8%	56.5%	55.1%
Have a clear job description	92.3%	95.8%	94.0%
Work at least 9 hours per day or more	27.3%	30.4%	28.9%
Work 6 or 7 days per week	40.0%	33.3%	36.7%
Contend that emergencies often change their work plan	77.0%	54.2%	66.0%
Contend that influential people often interfere with work plan	57.6%	45.8%	52.0%

Contend salary is commensurate with levels of responsibility	19.2%	12.5%	16.0%
Agree there are good guidelines for career progression	38.5%	43.5%	40.8%
Agree that good work performance helps in career progression	61.5%	45.8%	54.0%
Agree that a good M&E system is in place	39.1%	77.8%	56.1%
Agree that technical supervisor recognizes good work performance	91.3%	33.3%	65.9%
Agree that administrative supervisor recognizes good work performance	47.8%	44.4%	46.3%
Agree that there is a system in place to penalize poor performers	56.0%	34.8%	45.8%
Agree that good work performance enables them to get some cash awards	42.9%	46.2%	44.1%
Know someone who has been penalized due to poor performance	61.5%	40.9%	52.1%

About 65 percent of frontline animal health officers communicate formally with their technical and administrative supervisors monthly. Many have daily communication with their administrative supervisors rather than with their technical supervisors, because of proximity at work stations. However, quite a large proportion of the animal health officers, that is 75 percent, plan their weekly schedules on their own, without any consultation with their technical supervisor. Very few get commands / instructions on what to do from their technical supervisors. More than 50 percent are regularly interrupted during their daily job by influential people who request urgent services, both animal-health and non-animal health related, such as to visit their or their friend's farms for non-paid services.

A large minority (16 percent) of the frontline animal health officers agree that their current monthly salary is commensurate with their level of responsibility. Only 40 percent assert that guidelines for career progression are sufficiently clear, while 44 percent believe that the existing system of monitoring and evaluation is not effective. Indeed, 34 and 54 percent contend that good work performance is not recognized by their technical and administrative supervisor, respectively, though 44 agree that good work performance enables them receive some cash awards. Fifty-two percent are not aware of any officer who has been penalized for poor work performance.

4.3. Knowledge

Frontline animal health officers appear to have limited knowledge of existing animal health policies and laws, though they are supposed to facilitate their implementation on the ground. Often they classify laws as policies and vice versa.

About 63 percent (32/51) of all frontline officers said to have some knowledge of livestock sector policies and strategies, but out of these only 55 percent (17/32) were able to quote at least one. The most quoted policies were the Animal Breeding Policy (1997), the Dairy Master Plan (1998) and the National Veterinary Drug Policy (2001).

However, what matters the most is that frontline officers be aware of existing laws and regulations, which support the implementation of the overarching policy framework. In this regard, about 85

percent of all officers reported to be aware of existing animal health laws and regulations, while 15 percent admitted not to know any animal health law or regulation. Indeed, only 36 percent and 22 percent of them had ever been engaged in law and policy-making processes.

The large majority (70 percent) of the sub-sample of frontline animal health officers conversant with animal health laws and regulations were able to rightly mention at least one. They mainly referred to the Animal Disease Act (1958) and the Meat Control Act (1976) and the accompanying Meat Control Regulations. The former recommends measures public bodies and holders of animals should take for the control of animal diseases; the latter prescribes rules for licensing and control slaughterhouses with the objective to ensure health, sanitary and hygiene standards of food products. Frontline animal health officers also mentioned, among others, the Veterinary Surgeons and Veterinary Para-professionals Bill (now under review), the Public Health Act (1935), the Animal Breeding Act (2001), the National Drug Policy and Authority Act (1993). and the Rabies Act (1935). Frontline officers get information on animal health laws and regulations from a variety of sources, including their supervisors (68 percent), consultation of hard copies (28 percent), communication material (24 percent), informal discussion with colleagues (23 percent) and other.

Only about 35 percent of frontline staff report to receive trainings at least once per year, and 15 percent state to have never received any government training. As a result, for example, only 38 percent of frontline animal health officers are aware of the One Health approach. This translated into little of any adoption of the One Health approach on the round: only about 10 and 12 percent of frontline animal health officers regularly communicate with human health and environmental officers, respectively. To add to this, the majority of all frontline officers have concluded their course of studies more than two decades ago (38.2 percent fall in the 45-64 age bracket) and, hence, are not necessarily familiar with the most recent technologies and processes.

Table 4. Knowledge of policies, laws and of the One Health approach.

	Mukono N=26(51.0%)	Wakiso N=25(49.0%)	Overall (N = 51)
Contend to know relevant policies and strategies	50.0%	78.3%	63.3%
Able to name one livestock sector policy	46.2%	61.1%	54.8%
Contend to know relevant laws	80.0%	91.3%	85.4%
Able to name one livestock sector law	70.0%	71.4%	70.7%
Have participated in policy-making process	23.1%	47.1%	36.7%
Have participated in law-making process	14.3%	31.6%	22.5%
Are aware of policies / laws that has changed working procedures	19.2%	21.7%	20.4%
Contend working procedures can be improved at no cost	88.2%	85.1%	86.5%
Receive government training once per year or more frequently	34.5%	44.0%	39.2%
Are aware of the One Health approach	37.5%	38.9%	38.2%
Always communicate with Human health service provider	7.7%	13.0%	10.2%
Always communicate with Environmental officers	0.0%	25.0%	12.0%

5. Summary and conclusions

Veterinary services in Mukono and Wakiso districts face a variety constraints and, therefore, are unable to fully support the implementation of existing animal health policies and legislations. This is of concerns as enforcement and implementation of policies, laws and regulations is a delegated responsibility from the centre to local governments.

On the one hand, limited human and financial resources make it challenging for frontline animal health officers – who travel using a shared motorcycle, public transport or on foot – to be in the right place at the right time and provide efficient services to hundreds of farmers and other actors along the livestock value chain. In addition, the services provided essentially consist in providing advice, as only a few shillings or cents per year per client, if any, are available to purchase vaccines, syringes and other equipment necessary to offer quality animal health services. On the other hand, frontline animal health officers have limited incentives to perform well: they consider their salary incommensurate with respect to their levels of responsibility and their work efforts poorly rewarded. Over 3 out of 4 do not plan their weekly activities with their supervisor, that is they work almost alone. Frontline animal health officers also receive little training and, hence, have limited knowledge of the most recent technological and process advancements, of the One Health approach, as well of the existing policy and legislative framework. It is finally worth emphasizing that Wakiso and Mukono are among the Uganda districts with the highest aggregate and per-capita income and both are densely populated, i.e. other districts may face much more challenges in the provision of animal health services.

It does not come as a surprise, therefore, that frontline officers in Wakiso and Mukono contend that livestock operators along the value chain poorly comply with biosecurity practices, and hence that the current policy and legislative framework is partially implemented. According to them, only 14 percent of cattle farmers always or frequently adopt biosecurity practices, 10 percent of small ruminant keepers, 37 percent of poultry farmers, and 16 percent of pig producers.

Improving animal health services in both Mukono and Wakiso districts so that existing animal health policies and legislations are fully implemented calls for a three-pronged approach. First, in the long-term, veterinary services should be better funded. This implies either increased transfer of resources from the national to the District local governments or a different allocation of resources at district level. While any increase in resource availability is welcome, it is unlikely that the district governments will access sufficient resources anytime soon to provide high-quality services under the current institutional arrangements.

Second, in the medium term, given the limited availability of human and financial resources, district local governments should make an effort to establish a constructive and fruitful partnership with private sector actors. The latter include private animal health service providers, such as private veterinarians and agro-vet shops, farmers and other operators along the livestock value chain, as well as actors such as feed millers, finance institutions and others. Already today, as most of frontline animal health officers utilize their own resources and charge farmers to provide their services, the existing system of animal health services is implicitly based on a cost-sharing arrangement between the public and the private sector, though this arrangement is not institutionalized.

Third, in the short term, District governments should improve the working environment of frontline animal health officers. On the one hand, improved information sharing, such as on existing laws and regulations, as well as participatory planning involving from the district veterinary officers to the sub county, division and ward veterinary officers could assist in identifying low-cost adjustments for an improved provision of animal health services. On the other hand, an open dialogue with livestock farmers and other value chain actors, which takes into account challenges and constraints on both sides, could also assist in identifying more effective ways to provide veterinary services in the existing institutional environment. It is of note that about 86 percent of all frontline officers state that there are opportunities to improve their working modalities with no need of additional financial resources.

The above analysis and its conclusions should be refined and expanded to other districts of Uganda and avoid being generalized. The results should also prompt the international community in re-thinking its modalities to support improvement in animal health services provision, in Uganda and in other developing country for that matter. The long-term returns of short-term investments in policy and legislative reviews, a variety of assessments, trainings, provision of ICT equipment and veterinary supplies materialize only if, at the same time, complementary investments are undertaken to improve the institutional framework within which frontline animal health officers operate and provide services to actors along the livestock value chain.

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